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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,760	03/24/2004	Isao Misu	NDC.0015	2759

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EXAMINER	
SMITH, FRANCIS P	

ART UNIT	PAPER NUMBER
4151	

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11/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/708,760	MISU ET AL.	
	Examiner	Art Unit	
	Francis P. Smith	4151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *3/24/2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *3/24/2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/06/2004 and 6/29/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Figures 2a, 2b, and the "taper seal portion" (62a) of figure 2 are not labeled. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: Paragraph [0048], "...the surface of the shat 58" apparently means "the surface of the shaft 58."

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 discloses a method of manufacturing a spindle motor and a method of forming an oil repellent film. However, it is unclear whether the method of forming an oil repellent film is included in the method of manufacturing a spindle motor.

Claims 1 and 13 make reference to peeling off an excess part of said oil repellent solution. The specification, however, describes the peeling step as removing the excess repellent solution by suction ([0050], lines 14-15.) It is unclear whether the peeling of the said part refers to the oil repellent solution or a specific component of the solution.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-16 are rejected under 35 U.S.C. 102(b) as being unpatentable over Iwamoto (JP 2001232289).

Iwamoto teaches applying an oil repellent agent to the bearing component of a hydrodynamic bearing. In regard to supplying an oil repellent solution as per claim 1, Iwamoto teaches supplying the oil repellent agent through a spreading head (i.e. supplying nozzle of claim 3) via supply pipes at equal intervals in a radial direction ([0015] lines 6-7, [0017] lines 1-2). After the application of the solvent, the excess is discharged with an exhaust pipe (as per claim 2 and 5), which is analogous to peeling excess oil repellent solution by depressurizing suction through a nozzle ([0018] lines 7-8). Also, the bore section of the bearing component on which the oil repellent solution is applied changes nonlinearly (i.e. makes a relative movement of the predetermined area) [0009] lines 2-3.

Regarding claim 1, Iwamoto does not specifically indicate a method of manufacturing a spindle motor. However, since it is common to apply an oil repellent agent to the shaft surface and/or sleeve, it would be obvious to incorporate the method of applying an oil repellent agent of Iwamoto with assembling a spindle motor in order to prevent oil leakage to the external portion of the hydrodynamic bearing with reasonable expectation of success.

As to claims 4 and 6, Iwamoto teaches changing the orientation in a non-linear fashion after the application of an oil repellent solution ([0009], lines 1-3). However, Iwamoto does not disclose rotating part or all of said spindle motor including said predetermined area. It would have been obvious to one skilled in the art that changing orientation in the non-linear manner would entail rotating the said parts in order to uniformly apply the oil repellent agent in the teaching of Iwamoto.

For claim 7, Iwamoto discloses applying the oil repellent agent several times and then discharging (the excess) with an exhaust pipe (item 17 in fig. 3) [0018].

Similarly, for claim 8, Iwamoto discloses of applying the oil repellent agent several times and then discharging (the excess) with an exhaust pipe (item 17 in fig. 3) [0018]. Regarding the shape of the recess portion and predetermined areas, it has been held that to be entitled to weight in method claims, the recited structure limitations therein must affect the method in a manipulative sense, and not to amount to the mere claiming of a use of a particular structure. Ex parte Pfeiffer, 1962 C.D. 408 (1961).

As for claim 9, Iwamoto teaches an exhaust passage inserted near the predetermined area ([0015] line 12). However, Iwamoto does not explicitly disclose an approximately fixed gap existing between an approximately cylindrical peripheral surface and a recess peripheral surface. It would be obvious to one skilled in the art to position the vacuum source opposed to the target area at an optimum, fixed distance to ensure the removal of the excess oil repellent solution. Regarding the structural limitations of claim 9, such as the cylindrical location of the predetermined area and the recess peripheral surface shape, it has been held that to be entitled to weight in method claims, the recited structure limitations therein must affect the method in a manipulative sense, and not to amount to the mere claiming of a use of a particular structure, consult *Ex parte Pfeiffer*, 1962 C.D. 408 (1961).

As for claim 10, Iwamoto discloses applying the oil repellent agent several times and then discharging (the excess) with an exhaust pipe (item 17 in fig. 3) [0018]. However, while Iwamoto does not specifically teach a suction nozzle as a part of the suction apparatus, it would have been obvious to one skilled in the art to include said nozzle in order to create a stronger, centralized depressurizing suction focused on the predetermined area.

Regarding claims 11 and 12, it is noted that Iwamoto does not specifically teach checking/removing a clogging from the said leading portion by dipping in a solvent and discharging the said oil repellent solution. According to the EPA, cleaning solvents are commonly used to remove oil, grease, solder flux, and other contaminants. It would have been obvious to one skilled in the art to remove said clogging by placing the

nozzles in a solvent, particularly the solvent in which the oil repellent solution was made.

For claim 13, in regard to supplying an oil repellent solution, Iwamoto teaches supplying the oil repellent agent through a supplying portion at equal intervals in a radial direction ([0017] lines 1-2). After the application of the solvent, the excess is discharged with an exhaust pipe, which is analogous to peeling excess oil repellent solution by depressurizing suction through a nozzle ([0018] lines 7-8). Also, the bore section of the bearing component on which the oil repellent solution is applied changes nonlinearly (i.e. makes a relative movement of the predetermined area) [0009] lines 2-3.

It is noted that while Iwamoto does not specifically teach supplying a solvent for solving and removing the excess part of the oil repellent solution, it would have been obvious to one skilled in the art to remove said clogging by supplying a solvent, particularly using the solvent in which the oil repellent solution was made. Since cleaning solvents are commonly used to remove oil, grease, solder flux, and other contaminants, it would have been obvious to use the said solvent for dissolving and removing the solidified oil repellent film, which would prevent from obstructing the vacuum and hindering the oil repellant film uniformity on the predetermined area.

With regard to specific structural limitations of the apparatus, such as the components of a spindle motor (as per claim 13), a preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble

for completeness but, instead, the process steps or structural limitations are able to stand alone. *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976).

Iwamoto is silent about solving the excess part of said oil repellent solution and thus does not disclose of the removal of said dissolved, excess oil repellent solution as per claim 14 and 16. However, it would be obvious to one skilled in the art to rely on the Iwamoto's exhaust pipe (or suction apparatus) for the removal/recovery of the solved excess oil repellent solution for recycling purposes ([0018] and item 17 in fig. 3).

Regarding claim 15, Iwamoto teaches changing the orientation in a non-linear fashion after the application of an oil repellent solution ([0009], lines 1-3). However, Iwamoto does not disclose rotating part or all of said spindle motor including said predetermined area. It would have been obvious to one skilled in the art that changing orientation in the non-linear would entail rotating the said parts in order to uniformly apply the oil repellent agent.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Francis P. Smith whose telephone number is (571) 270-3717. The examiner can normally be reached on Monday through Friday 7:30 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mikhail Kornakov can be reached on (571)272-1303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FPS

/Michael Kornakov/
Supervisory Patent Examiner, Art Unit 4151